

# Prince William County's Inaugural Environmental Sustainability Annual Report

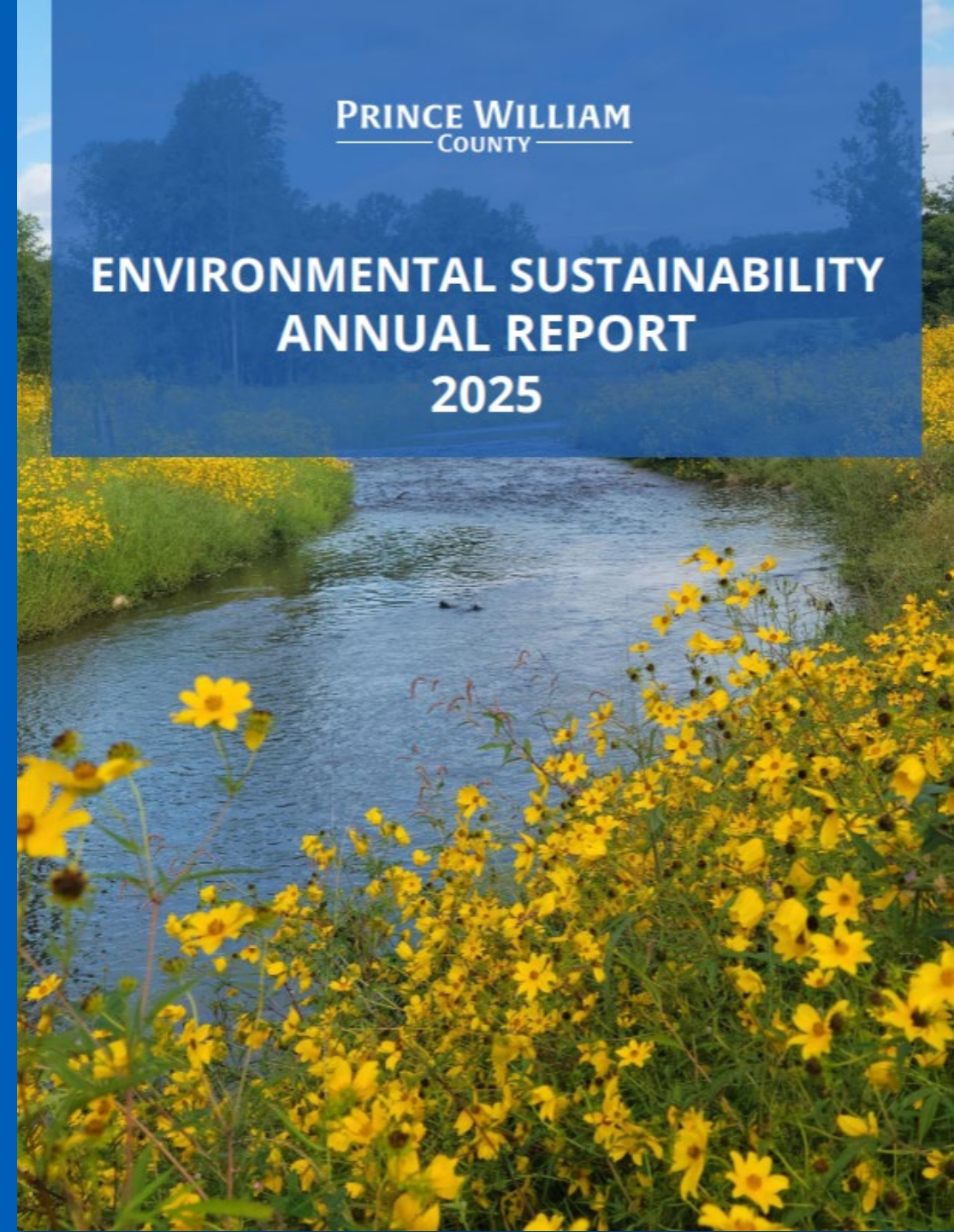
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Prince William County Government

May 2026

# Agenda

- Background – County Strategy
- Development of Environmental Sustainability Annual Report
- Report Highlights
- What's Next



# **Background – County Strategy**

# Climate Mitigation and Resiliency Goals

*(Res. No. 20-773)*



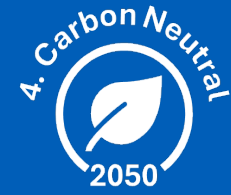
**Reduce county-wide greenhouse gas (GHG) emissions by 50% from 2005 levels by 2030.**



**Procure 100% renewable electricity county-wide by 2035.**



**Procure 100% renewable electricity for county government operations by 2030.**




**Achieve carbon neutrality for county government operations by 2050.**




**Become a Climate Ready Region by 2030.**

# Community Energy & Sustainability Master Plan (CESMP)



**Energy**

- E.1. Acquire Clean Electricity Sources for the County
- E.2. Promote Renewable Energy Incentive Programs and Develop Additional Solar Incentives
- E.3. Encourage Renewable Energy Use in Energy-Intensive Commercial Buildings
- E.4. Promote Existing Green Power Products
- E.5. Install Solar on County Government Facilities



**Buildings**

- B.1. Encourage Energy Efficiency and Electrification Retrofits
- B.2. Propose Green Zoning Regulations
- B.3. Encourage Energy Efficient and Electric New Construction
- B.4. Promote Energy Efficiency and Electrification Incentives
- B.5. Transition to Net-Zero County Government Facilities




**Transportation**

- T.1. Improve Pedestrian and Bicycle Infrastructure and Enhance Connectivity
- T.2. Encourage Transit-Orientated Development
- T.3. Expand Existing Programs that Reduce Single-Occupancy Vehicle Trips
- T.4. Upgrade Public Transit Infrastructure
- T.5. Encourage Zero-Emission Vehicles and Charging
- T.6. Expand Public EV Charging Network
- T.7. Adopt Zero- or Low-Emissions County Fleet



**Natural Resources**

- N.1. Adopt Natural Open Space Requirements



**Adaptation**

- A.1. Develop Adaptation Plans for Critical Facilities
- A.2. Manage Stormwater Flooding Outside of the Floodplain
- A.3. Improve Power Resiliency for Critical Infrastructure
- A.4. Assess Shoreline Protection and Nature-Based Solutions
- A.5. Restore Streams to Reduce Flooding
- A.6. Encourage Technology for Residents to Make Homes Adaptive
- A.7. Plan Alternate Evacuation Routes for Flood-prone Areas

# 2025 – 2028 Strategic Plan Environment Goal

Preserve the County's natural beauty and resources so that open spaces are created and maintained, and residents can enjoy nature.



## Safeguard natural resources

*Safeguard the quality of the County's air, water, and other natural resources to ensure they are not compromised for the current and future generations.*



## Enhance green spaces

*Enhance and expand public parks, trails, and green spaces to improve accessibility.*



## Use the CESMP and Comp Plan to meet climate goals

*Utilize the CESMP and Comp Plan to guide decision-making and encourage leadership, businesses, and residents to help the Board achieve climate mitigation and resiliency goals.*



## Expand renewable energy sources

*Support and incentivize the development and use of renewable energy sources to reduce impacts on air quality and the environment.*



## Reduce and mitigate flooding

*Reduce and mitigate the impacts of flooding in communities.*

# Environmental Sustainability Milestones

## Board of County Supervisors direction

November 2020

Climate Mitigation and Resiliency **Goals**

October 2023

Community Energy and Sustainability **Master Plan**  
(CESMP)

May 2024

Initiated Sustainability and Resiliency  
**Comprehensive Plan Amendment** (CPA)

February 2025

**Strategic Plan** including the Environment Goal

## County government implementation

March 2022

Office of Sustainability was established

Starting from 2024

Office of Sustainability leads the implementation

 **17/25** high-priority actions  
initiated across County departments with limited resources

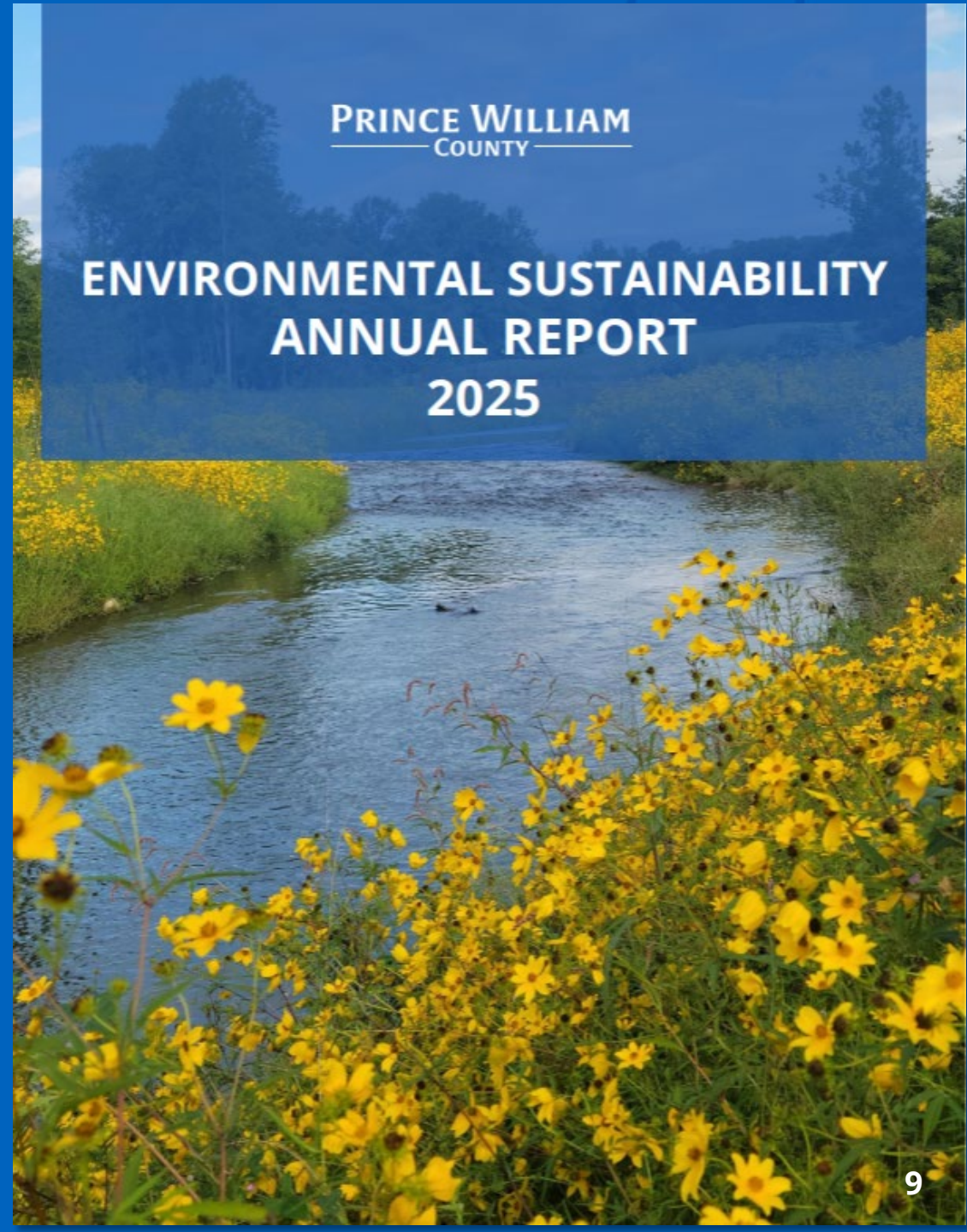
April 2026

First Annual Report launched

# **Development of Environmental Sustainability Annual Report**

## Purpose of Annual Report

- Annual update on progress and performance for sustainability countywide
- Opportunity to highlight key accomplishments
- Share county's sustainability story within the region



# Whole-of-government Report Development

All County agencies were consulted in the Annual Report development process

Safe & Secure Community

Community Safety

Criminal Justice Services

Fire & Rescue

Police

Public Safety  
Communications

Adult Detention Center

Mobility, Economic Growth  
& Resiliency

Development Services

Economic Development &  
Tourism

Planning

Public Works

Transportation

Government Operations,  
Performance & Innovation

Facilities & Fleet  
Management

Human Resources

Human Rights

Information Technology

Performance  
Management

Procurement Services

Strategic Planning

Health, Wellbeing &  
Environmental Sustainability

Area Agency on Aging

Community Services

Housing & Community  
Development

Library

Parks & Recreation

Social Services

Youth Services

Finance

Office of Equity &  
Inclusion

Office of Transformation  
Management

Office of Communications  
& Engagement

# Whole-of-government Report Development

**All County government energy users were consolidated into a single digital platform** for utility bill payment and energy/emissions tracking



Safe & Secure Community

Mobility, Economic Growth & Resiliency

Government Operations, Performance & Innovation

Health, Wellbeing & Environmental Sustainability

Community Safety

Development Services

Facilities & Fleet Management

Area Agency on Aging

Finance

Criminal Justice Services

Economic Development & Tourism

Human Resources

Community Services

Office of Equity & Inclusion

Fire & Rescue

Planning

Human Rights

Housing & Community Development

Office of Transformation Management

Police

Public Works

Information Technology

Library

Office of Communications & Engagement

Public Safety Communications

Transportation

Performance Management

Parks & Recreation

Procurement Services

Social Services

Adult Detention Center

Strategic Planning

Youth Services

# Whole-of-government Report Development

**Agencies and partners** are acknowledged in the report for their substantial environmental sustainability initiatives and collaborations

## Safe & Secure Community

Community Safety

Criminal Justice Services

Fire & Rescue 

Police

Public Safety Communications

Adult Detention Center

## Mobility, Economic Growth & Resiliency

Development Services 

Economic Development & Tourism

Planning 

Public Works 

Transportation 

## Government Operations, Performance & Innovation

Facilities & Fleet Management 

Human Resources

Human Rights

Information Technology

Performance Management

Procurement Services


Strategic Planning

## Health, Wellbeing & Environmental Sustainability

Area Agency on Aging

Community Services

Housing & Community Development

Library 

Parks & Recreation 

Social Services

Youth Services

Finance

Office of Equity & Inclusion

Office of Transformation Management

Office of Communications & Engagement

 *Special thanks*

VCE / Soil & Water District

PWCS 



Case study and/or standalone narrative

# Report Highlights

# Headline Accomplishments



## CLIMATE ACTION PROGRESS

- 25** High-priority sustainability actions identified in the Community Energy and Sustainability Master Plan
- 17** Actions initiated across county departments
- 10** Actions currently in active implementation



## CLEAN ENERGY

- 3,100+** Residential solar installations across Prince William County since 2015
- 469 kW** Rooftop solar capacity planned for county facilities
- 2045** Virginia Clean Economy Act target year of carbon-free electricity generation



## NATURAL RESOURCES

- \$83 million** Annual benefits provided by tree cover in Prince William County
- 4,785 feet** Stream restored along Powell's Creek in 2025
- 2,185 pounds** Trash captured before entering the Potomac River watershed in 2025



## TRANSPORTATION

- 29%** Reduction in on-road transportation emissions per capita since 2005
- 7,600+** Electric and plug-in hybrid vehicles registered in Prince William County
- 85** Electric vehicle charging stations installed on county properties



## COMMUNITY IMPACT

- 300** Households received energy audits and weatherization assistance through Community Housing Partners as of 2025
- 20%** Cost savings from flood insurance premium reduction through FEMA's Community Rating System

## Major Reduction in Landfill Emissions

Emissions from the solid waste landfill decreased by 51%, driven by the implementation of the Renewable Natural Gas facility. This represents one of the most significant emissions reductions across all sectors and highlights the impact of strategic infrastructure investments.

### CASE STUDY: PRINCE WILLIAM COUNTY LANDFILL RENEWABLE NATURAL GAS FACILITY



Prince William County's renewable natural gas initiative reflects decades of environmental stewardship and innovation. The project demonstrates how long-term investments in infrastructure and partnerships can evolve to support modern climate priorities.

Landfill gas capture at the Prince William County Sanitary Landfill began in the 1990s. Initially, the captured gas was used to generate electricity through a partnership with OPAL Fuels, then operating as Fortistar. While this early system reduced emissions associated with waste decomposition, it relied on combustion and captured only part of the landfill's environmental potential.

In September 2021, the Board of County Supervisors approved a new 20-year agreement with OPAL Fuels and its subsidiary, Prince William RNG LLC, to develop a next-generation renewable natural gas facility. The project converts landfill gas into consumer-grade renewable natural gas, eliminating the need to burn landfill gas directly.

The county has also continued to strengthen recycling and waste diversion efforts. In 2024, Prince William County achieved a preliminary recycling rate of 43.7%, pending verification by the Virginia Department of Environmental Quality. This represents the highest recycling rate recorded since 2011 and exceeds both the state-mandated goal of 25% and the statewide average of 39.5%.

The renewable natural gas facility represents another major advancement in environmental performance. With approximately 95% conversion efficiency, the system can produce up to 12.4 million gasoline gallon equivalents of renewable natural gas annually at full capacity. Instead of allowing methane to escape or be burned, the system captures landfill gas and refines it into a usable clean fuel that can power vehicles or be distributed to homes and businesses.

Methane emissions at the landfill are reduced by approximately 95%, improving air quality and significantly lowering greenhouse gas emissions.

Since beginning operations in the second quarter of 2024, the facility has delivered measurable environmental benefits aligned with the county's Climate Mitigation and Resiliency Goals under the Strategic Plan. Emissions of key pollutants, including carbon monoxide, sulfur dioxide, nitrogen oxides and volatile organic compounds, have been reduced by more than 90%. Methane emissions at the landfill declined by more than 50% between 2023 and 2024.

The project also positions Prince William County as a regional leader in environmental innovation. According to the U.S. Environmental Protection Agency's landfill gas database updated in September 2024, the Prince William renewable natural gas facility is the only operating landfill-based renewable natural gas project in the Washington metropolitan region.

This distinction highlights the county's long-standing commitment to protecting air quality, conserving natural resources and investing in infrastructure that benefits both current residents and future generations.

Through this initiative, Prince William County demonstrates how legacy environmental investments can evolve to support the Strategic Plan's Environment Goal by reducing pollution, mitigating climate impacts and transforming waste into a renewable energy resource.

## PROGRAM SPOTLIGHT: REFOREST PWC



Reforest PWC is a voluntary county program that partners with private property owners to convert suitable open or grassy areas into long-term native forests at no cost to the landowner.

Through an application and on-site consultation process, county arborists work directly with participants to evaluate site conditions, identify appropriate planting locations and guide the project from planning through installation.

Once approved, the county coordinates planting through supervised contractors, installs protective measures to support successful tree establishment and conducts follow-up inspections to encourage long-term survival.

The result is a diverse, self-sustaining forest that improves wildlife habitat, enhances water quality, increases climate resilience and contributes to carbon sequestration. These forests also help mitigate urban heat island effects while providing lasting environmental benefits for property owners and the broader community.

According to the Chesapeake Tree Canopy Network, 55% of land in Prince William County was covered by tree canopy as of 2021. This canopy provides an estimated \$83.1 million in annual environmental benefits through reductions in air pollution, stormwater runoff and carbon dioxide.

Despite these benefits, the county experienced a net loss of 1,952 acres of tree canopy on developed land between 2014 and 2021, highlighting the continued importance of conservation and reforestation efforts.



# Case Study: Environmental Education

## CASE STUDY: SUSTAINABILITY IN PRACTICE AT PRINCE WILLIAM PUBLIC LIBRARIES

Prince William Public Libraries have integrated sustainability into daily operations, facilities management and community programming. These efforts demonstrate how a public library system can advance environmental stewardship while improving service delivery.

Rather than treating sustainability as a standalone initiative, the library system incorporates environmentally responsible practices across its facilities, programs and digital services, aligning with broader county sustainability goals.

A major focus of the library system's work has been reducing energy use and operational waste. Prince William Public Libraries completed a systemwide transition to LED lighting, significantly lowering electricity consumption while reducing greenhouse gas emissions and operational costs.

Waste reduction initiatives have also expanded. Programs include plastic bag recycling partnerships, installation of water bottle refill stations to reduce single-use plastics and expanded recycling services across library locations.

Composting initiatives have also been introduced. The library distributes countertop compost kits and hosts educational programs.

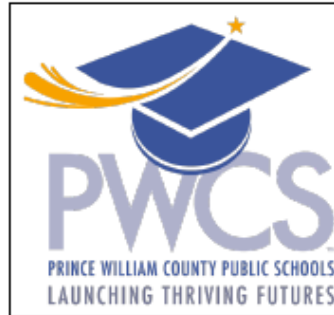
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Composting educational program



## PRINCE WILLIAM COUNTY PUBLIC SCHOOLS: BUILDING A SUSTAINABLE FUTURE



Prince William County Public Schools (PWCS) is home to one of the most comprehensive K-12 energy and sustainability programs in Virginia, weaving environmental and fiscal stewardship into daily operations, instructional practice, and long-term planning. The school division's Energy & Sustainability Program provides strategic leadership and oversees initiatives that improve building performance, reduce environmental impact, and support healthier learning environments for the division's 90,000 students.

### A Systemwide Approach

PWCS' sustainability work is grounded in School Board policy, which calls for protecting quality of life and reducing the division's environmental

footprint. The sustainability component of the Energy & Sustainability program, established in 2021, works across departments—Facilities, Transportation, Procurement, Finance, and more—to ensure sustainability is integrated at every level of the organization. This includes aligning capital investments with long-term resilience goals and optimizing building systems to ensure energy efficiency, water conservation, and healthy learning environments.

The Energy  
conducting  
The team  
improvement

### Healthier, More Efficient Schools

PWCS monitors energy, water, and waste trends to continuously improve performance. Divisionwide energy intensity has steadily decreased since the energy management component of the program began, and the school system tracks water use in both buildings and irrigation systems to ensure resources are used responsibly. Smart irrigation, improved building controls, and consistent operational practices help reduce waste and improve efficiency.

Indoor air quality is a major priority, with real-time IAQ monitoring expanding across schools to ensure healthy learning environments and enable early detection of HVAC issues. Building improvements—from geothermal HVAC systems to retrocommissioning—help stabilize costs, reduce emissions, and enhance resilience during extreme weather. Since 2012, the program's energy conservation efforts have helped PWCS avoid nearly \$83 million in utility costs.



Beville Middle School solar array

# Overall Community-Wide Emissions Trend

MWCOG conducts and publishes locality-scale greenhouse gas inventories for its member jurisdictions.

Chart 1: Prince William County Community-Wide GHG Inventory 2005-2023



1. GHGs  
  
 2030  
 Reduce county-wide greenhouse gas (GHG) emissions by 50% from 2005 levels by 2030.

PWC GHG emissions +19% from 2005 to 2023

# Providing Context to 2023 Greenhouse Gas Inventory

Building efficiency  
Electrification  
Cleaner grid

Residential buildings



## Emissions



## Housing units



Non-data center commercial buildings



## Emissions



## Total SqFt



Data center commercial buildings

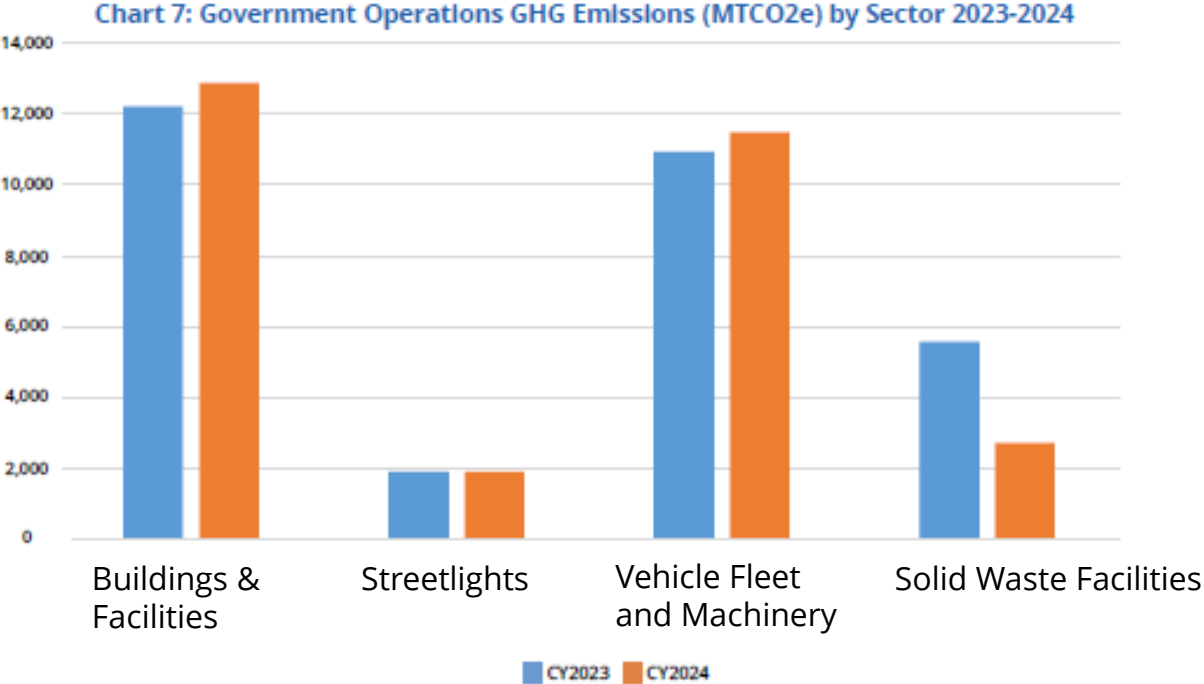


## Emissions

76% of Scope 2 emissions from commercial building sector in 2023

# Government Operations Emissions

Data from Prince William County’s first Government Operations Greenhouse Gas Emissions Inventory shows county government achieved a 5.4% reduction in total government operations emissions between 2023 and 2024.



Emissions from the solid waste landfill



**51%**  
between 2023 to 2024

Driven by the implementation of the Renewable Natural Gas facility

Inventory has undergone Quality Assurance Quality Control peer review by ICLEI USA.

**What's Next**



# What's Next for Sustainability

## *Projects launched*

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Complete the **Sustainability and Resilience Comprehensive Plan Amendment** by end of 2026

## *In collaboration with*

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Planning Office, Emergency Management, Public Works, Transportation

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Implement the **Building Electrification Study** recommendations in county's new construction and major renovations

Facilities and Fleet Management, Department of Transportation and Capital Construction

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Complete the **Net Zero Emissions Buildings Plan** by end of 2026

FFM, ADC, Fire & Rescue, Parks & Rec, Community Services, Risk and Wellness, Procurement

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Support development of the **Flood Resilience Plan**

Emergency Management, Public Works

# Communications

PRINCE WILLIAM VIRGINIA

MY GOV INFO & SERVICES GET INVOLVED NEWS & SOCIAL MEDIA

News Events Social Media

Prince William County Releases First Environmental Sustainability Annual Report

Prince William County Hosts Pinwheel Garden Planting to Recognize Child Abuse Prevention Month

When Training Turns into Instinct

Home My Network Jobs Messaging

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Prince William County has released our first-ever Environmental Sustainability Annual Report and it's packed with real progress, measurable ...more

2025

Prince William County Releases First Environmenta.  
pwcvva.gov

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Prince William County's first environmental sustainability report highlights progress on major green goals

Sebastian Kraft Apr 27, 2025

Sustainability Office

MENU

Prince William County  
ENVIRONMENTAL SUSTAINABILITY ANNUAL REPORT 2025

Prince William County Releases First Environmental Sustainability Annual Report

The Prince William County Office of Sustainability has released the county's first Environmental Sustainability Annual Report, highlighting progress, success stories and ongoing efforts to advance environmental sustainability across the community. The report provides a comprehensive look at how the county is implementing the Community Energy and Sustainability Master Plan and advancing the Environment goal outlined in the 2025-2028 Strategic Plan. It showcases innovative initiatives, measurable outcomes and collaborative efforts taking place across county agencies and the community.

READ THE FULL REPORT →

Metropolitan Washington Council of Governments

REGIONAL ROUNDUP

NEWS

Environment

Prince William County's first environmental sustainability report highlights progress on major green goals



Thank you for your time!

Giulia Manno  
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Find the Report

